# HAWKER® Headlines

## Winter 2022 edition

## Quick Tips!

*Is the **Hawker® ARMASAFE™ Plus** 6TAGM battery manufactured in accordance to a military performance specification?*
It sure is…and, in fact, **it performs better than that!**
The current MIL-PRF is 32143C…and can be found here:
www.hawkerbattery.com/resources/

| METRIC |
|---|
| MIL-PRF-32143C |
| 9 February 2016 |
| SUPERSEDING |
| MIL-PRF-32143B |
| 5 October 2011 |

## Answer to question from last issue:

***Are there any special instructions for charging a Hawker® battery in extreme cold weather conditions?***

***Yes!*** Lead-acid batteries store energy in a **chemical form**. Once a circuit is created between the negative and positive posts, it allows **a chemical reaction between the plates and the electrolyte** to readily take place, thereby freeing stored electrons to travel from the negative post, through the circuitry, power the equipment, then continue through the circuitry into the positive post. This chemical reaction occurs at and near the plates' surface. But, as battery temperature decreases, electrolyte viscosity ("thickness") increases **causing slower chemical diffusion near the plates**. The result is less amperage output during discharge **and** less amperage acceptance during recharge. *For example, the **CCA rating** [(measured at 0°F (-18°C) for 30 seconds] of a **Hawker® ARMASAFE™ Plus battery is 1225 amps**, but at -40°F (-40°C) that same battery can only provide **500.*** Likewise, at colder temperatures, charging is affected: **amperage acceptance will be reduced but charger output voltage must be increased** (see table). "Normal Charging Voltage" is used during the recovery (corrective) charge cycle; "Float Charging Voltage" is used during the storage (preventive) charge regimen. **Note: Never charge a frozen battery.**

| Temp F | Temp C | Max Current Acceptance (Amps) | Normal Charging Voltage (VDC) | Float Charging Voltage (VDC) |
|---|---|---|---|---|
| 104° | 40° | 700 | 14.4 – 15.0 | 13.4 |
| 68° | 20° | 500-600 | 14.6 – 15.0 | 13.8 |
| 32° | 0° | 300 | 15.4 | 14.4 |
| -4° | -20° | 100 | 16.3 | 15.2 |
| -40° | -40° | 40 | 17.1 | 16.2 |

**Note: "Temp" refers to the battery's temperature (not ambient)**

## Did you know:

that batteries have **internal resistance**? It's expressed as $\mathbf{R_{int}}$. The $R_{int}$ of a new Hawker® ARMASAFE™ Plus 6TAGM battery is a relatively low 0.0017 ohms, while a new 6TMF battery is 0.009 ohms (5.3 times higher). Furthermore, a dead battery's $R_{int}$ may be 0.645 ohms...which is 380 times greater! Increased $R_{int}$ lowers performance and is one of the reasons ***you shouldn't mix batteries of different types or of different capabilities***.

## Training:

***"One, two, three, four…what's a Hawker® FSR for?"***

Well, we're your "one-stop" field support representatives, providing you with technical assistance. In fact, we'll even come to your military motor-pool and conduct ***Battery Maintenance & Recovery Training***…all at no cost! All you gotta do is contact us.

***Next Issue:***
***Do I need a special charger for AGM batteries…like the Hawker® brand?***

## Questions?

**Visit our website at *www.hawkerbattery.com***
**Call us at *877.485.1472***

**NSN: 6140-01-485-1472**
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